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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,060	10/31/2001	Laurance N. Hazlehurst	38190/207407	6687
826	7590	07/13/2004	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			CADUGAN, ERICA E	
			ART UNIT	PAPER NUMBER
			3722	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,060

Applicant(s)

HAZLEHURST ET AL. 

Examiner

Erica E Cadugan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
4a) Of the above claim(s) 9,12-16,21,23-25,37-46,48-54 and 58-64 is/are withdrawn from consideration.
5) ☒ Claim(s) 47 and 55-57 is/are allowed.
6) ☒ Claim(s) 1-3,10,11,17,18,20,26-29,35 and 36 is/are rejected.
7) ☒ Claim(s) 4-8,19,22,30-34 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 31 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. It is noted that claims 9, 12-16, 21, 23-25, 37-46, 48-54, and 58-64 are still withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species/invention, there being no allowable generic or linking claim, which restriction requirement was made final in the office action mailed 8/21/2003.

Claim Rejections - 35 USC § 103

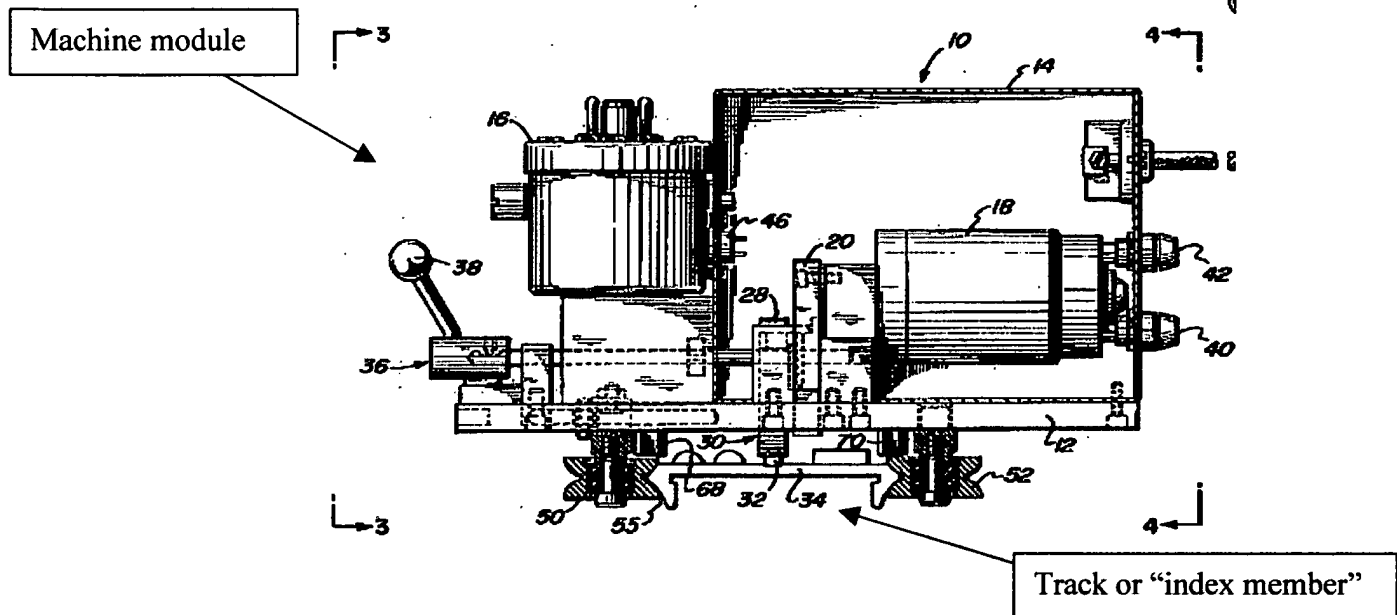
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 10-11, 17-18, 20, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 3,722,497 (Hiestand et al.) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie), and also, claims **1-3, 10-11, 17, 20, and 36** are rejected under 35 USC 103(a) as being unpatentable over either of U.S. Pat. No.'s 4,422,384 (Johnson et al.), 2,921,492 (Worth) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie).

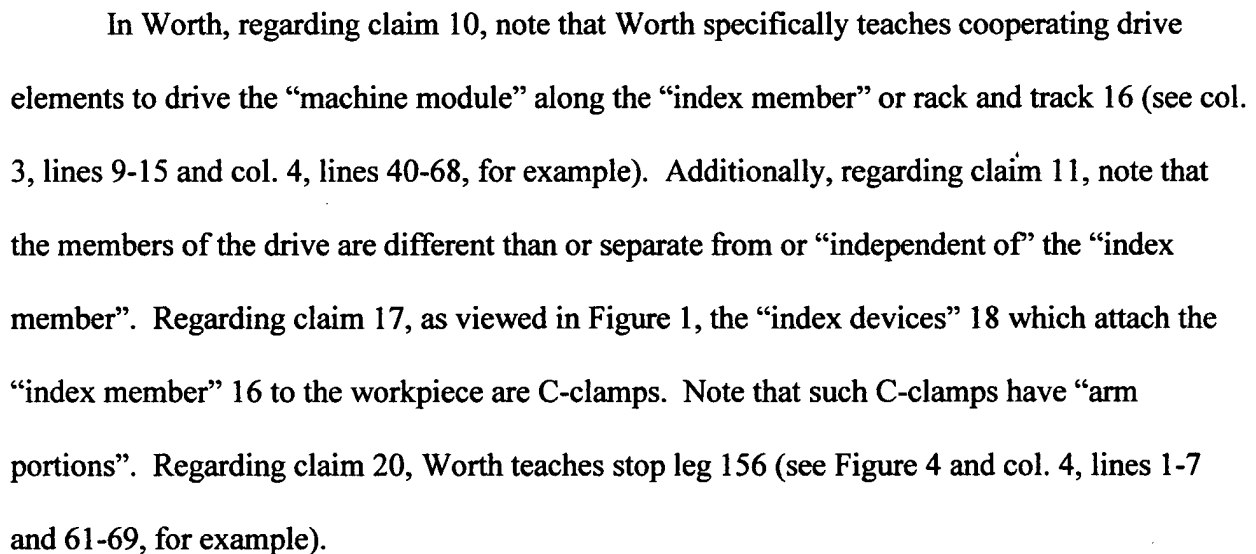
Johnson et al., Worth, and Hiestand et al. each teach "machine modules" having processing tools for processing a workpiece, which modules are provided for being driven along a track or guide that is affixed to the workpiece. See the Figures below that are reproduced from these references.

FIG. 2

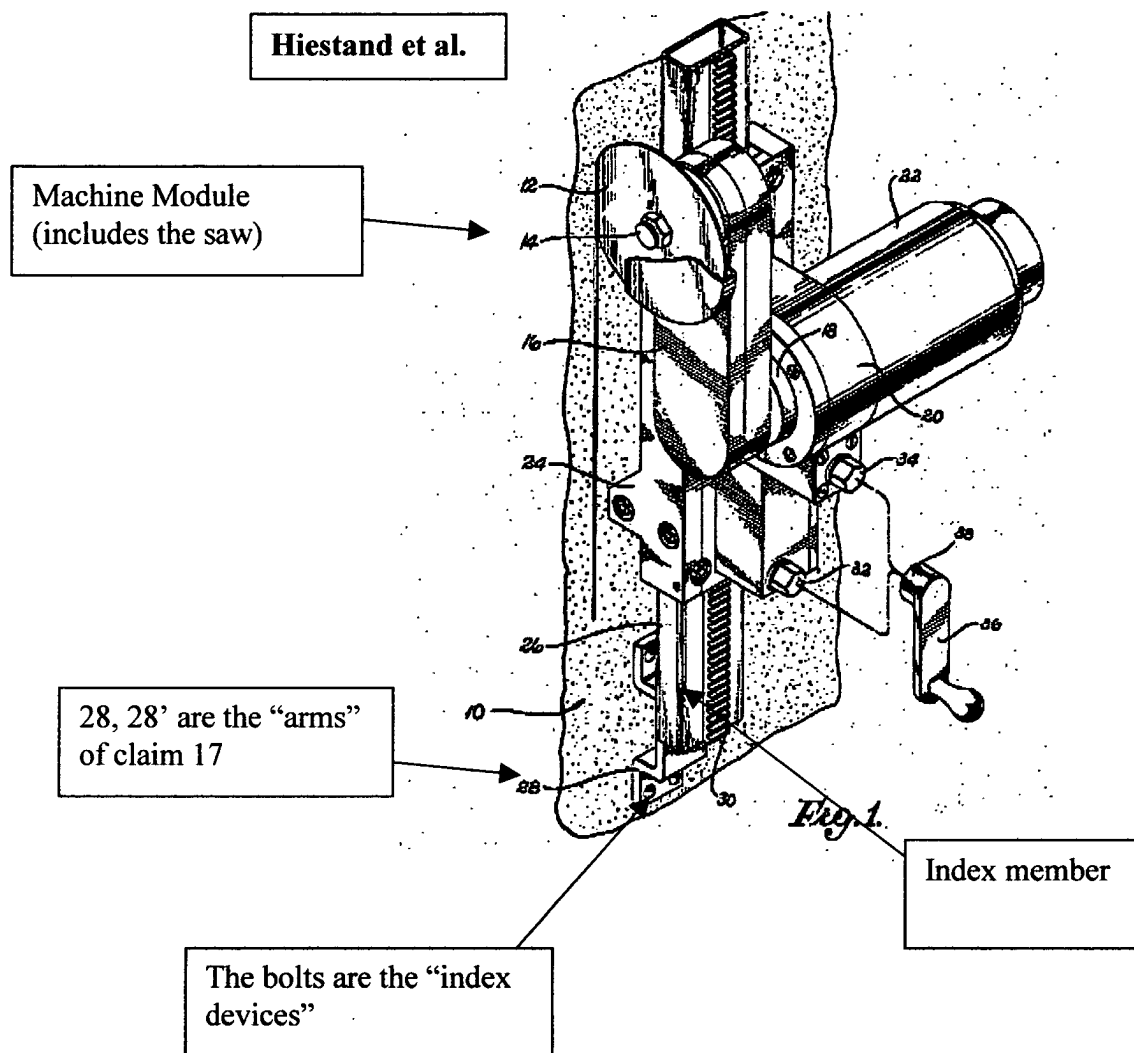
Johnson et al.



In Johnson et al., the devices described in col. 1, lines 10-11 that secure the track to the workpiece are considered the claimed "index devices". Regarding claim 10, note that the "machine module" is driven via a motor and rack and pinion system (see col. 2, lines 1-4, for example). Regarding claim 11, note that the drive motor and gear, as well as the rack 32, are separate from or "independent" of the index member or track 34 (see Figure 2, also col. 2, lines 1-4, for example). Regarding claim 17, it is considered inherent that there must be some structure of the track that contacts or connects to the described "index devices", or else the index devices would not function to secure the track in position relative to the workpiece as described in col. 1, lines 1-18, for example. Regarding claim 20, note that Johnson teaches locking the device in place (see col. 3, lines 3-7 and col. 4, lines 50-60, for example).



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In the Hiestand reference, regarding claim 10, Hiestand specifically teaches that a motor can be used to drive the worm 70 to thereby drive the worm wheel 68, which thereby, via the engagement of gear 66 with rack 30, drives the "machine module" along the "index member" 26 (see Figures 1-2 and col. 4, lines 45-46 and col. 3, lines 15-27, for example). Regarding claim 11, note that the drive elements appear to all be separate from or different than the "index member" 26 (note in Figure 1 that the rack, as shown at its cross section at the top of the member 26, is shown as a different member than 26). Specifically regarding claim 18, note that Hiestand

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specifically teaches the use of plural brackets or “arms” 28, 28’, see col. 4, lines 8-12). Note that both “arms” are “fixed” to the member 26 in use, or else the device would not function in use as described by Hiestand. Further note that it is considered inherent that both “arms” are also “able” to be adjusted along the index member 26 by physically separating them from the member 26, and moving them longitudinally along the index member, for example, by cutting the arm from the member 26 and moving it by hand to a new position and reattaching it at said new position.

None of Johnson et al., Worth, or Hiestand et al. teach any sort of device whereby the “machine module” detects “position-indicating features” along the index member to thereby determine a position of the machine module relative to the workpiece. Additionally, regarding claim 36, none of Johnson et al., Worth, or Hiestand et al. explicitly teach plural systems as claimed.

Regarding the position-indicating features, etc., each of Schlosstein et al., Nagaoka et al., Onodera et al., and Howie teaches a linear scale in the form of an “encoder tape” or “position-indicating strip” which is provided on a stationary member, and a reader that is provided on a moveable member for reading “position-indicating features” of the scale as relative movement occurs between the movable member and the stationary member. See Schlosstein et al., col. 5, lines 50-55, for example. See Nagaoka et al., Figures 1-2, col. 1, lines 5-10 and col. 3, lines 33-53, for example. See Onodera et al., Figure 1 and the abstract, for example. See Howie, Figure 1 and col. 1, lines 5-15 as well as col. 5, lines 23-49, for example.

Schlosstein et al. specifically teaches that the linear scale device enables the control system for the machine to position the carriage 40 (of the truck) with “great accuracy lengthwise

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along the path of the stringer so that the holes are drilled at the correct position” (col. 5, line 62 through col. 6, line 2). Nagaoka et al. specifically teaches that the linear scale device provides an accurate device for measuring the relative position or displacement between two objects, which device is specifically constructed so as to be easily manufactured (see col. 1, lines 50-55, for example). Onodera et al. specifically teaches that their scale is especially suitable for performing accurate measurements in a machine tool environment because it is specially constructed to be “fully protected from being damaged” (col. 1, lines 38-42 and also lines 1-37). Howie specifically teaches that his position monitoring device is advantageously used in an environment with tool changes so that each tool can easily be re-zeroed (see col. 2, lines 47-55 and col. 1, lines 15-25, for example).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided any of the stationary track members or “index member” taught by any of Johnson et al., Hiestand et al., or Worth with the scale or “position-indicating strip”/“encoder tape” of any of Schlosstein et al., Nagaoka et al., Onodera et al., and Howie for any of the purposes of enabling the drives of any of the devices of Johnson, Hiestand, or Worth to position their “machine modules” with “great accuracy lengthwise” so that machining is performed at the correct position as taught by Schlosstein et al. (col. 5, line 62 through col. 6, line 2), so that an easily manufactured device that improves the accuracy of the machining operation is provided as taught by Nagaoka as described above, so that a rugged non-easily-damaged device that improves the accuracy of the machining operation is provided as taught by Onodera as described above, or so that when tools of the machining devices are replaced, such as with new ones when the old ones become dull, the device can easily be

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rezeroed, thus improving the accuracy of the machining operation, as taught by Howie and described above.

Regarding claim 36, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided as many devices as were desired or expedient, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 17 and the Johnson reference, in the alternative, while it is considered inherent that there must be some structure of the track that contacts or connects to the described “index devices”, as described above, Johnson does not specify that such structure is in the form of “arms” as claimed. However, it is noted that an arm is a well-known device as used for connecting and securing two members. As such, it would therefore have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized well-known and conventional “arms” to secure the track to any of the various track positioning or “index devices” described in col. 1, lines 1-18 for the purpose of providing a well-known, and thus readily available and also proven means of attachment of the track to the “index devices”.

4. Claims 26 and 28-29 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,422,384 (Johnson et al.) in view of any of U.S. Pat. No.’s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie) as applied to claim 1 above, and further in view of U.S. Pat. No. 6,158,666 (Banks et al.).

Johnson et al. in view of any of Schlosstein et al., Nagaoka et al., Onodera et al., or Howie teaches all aspects of the claimed invention as described in the above rejection based thereon.

However, while Johnson generically teaches that the “machine module” can be a “tractor or tool

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positioning device” for supporting and guiding a “metal working tool” (col. 1, lines 5-8) and also generically teaches that the metal working tool can be for, for example, “e.g., gas cutting or welding, Air Carbon-Arc Cutting or Gouging, mechanical machine, or the like” (col. 2, lines 32-40, for example), which teaching encompasses or does not preclude a drill or a fastener insertion device, Johnson does not explicitly teach a drill or a fastener insertion device.

However, Banks et al. teaches a mini-riveter system 100 for processing workpiece panels 110 (Figure 5, for example). Banks also teaches longitudinally-extending rails 102 (see Figure 5 and col. 7, lines 28-34, for example) that are releasably engaged with the workpieces (see Figure 5, for example). Regarding the “machine module”, note that outside end effector assembly 104 (Figure 8A, for example) includes a drill/countersink module 252 and a rivet module 254 (Figures 8A-8E), and is movable along rails 102 (col. 10, lines 24-26, for example) via “cooperating drive elements” such as friction drive wheel that “cooperates” with the surface of rail 130 (col. 10, lines 23-41, for example).

Regarding claim 29, note that pressure foot 230, mounted on end effector 104 applies clamp-up pressure to the lap joint being fastened (col. 10, line 42 through col. 11, line 30, also, Figures 8C to 8E and col. 6, lines 1-3 and 23-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the specific machine module that is movable along rails and which includes a drill/countersink module, rivet module, and pressure foot (as well as its index pins on which the end effectors of the module home) as taught by Banks, or to have substituted the prior art mini-riveter system described by Banks which homes on fixtures (col. 6, lines 52-53) for the generic “tool positioning device” taught by Johnson for the purpose of

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providing a specific market for Johnson's device, i.e., the drilling and/or riveting market, thereby generating revenue for the sales of Johnson's device.

5. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pat. No. 4,422,384 (Johnson et al.) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie) as applied to claim 1 above, and further in view of U.S. Pat. No. 3,722,711 (Seidel).

Johnson et al. in view of any of Schlosstein et al., Nagaoka et al., Onodera et al., or Howie teaches all aspects of the claimed invention as described in the above rejection based thereon. However, while Johnson generically teaches that the "machine module" can be a "tractor or tool positioning device" for supporting and guiding a "metal working tool" (col. 1, lines 5-8) and also generically teaches that the metal working tool can be for, for example, "e.g., gas cutting or welding, Air Carbon-Arc Cutting or Gouging, mechanical machine, or the like" (col. 2, lines 32-40, for example), which teaching encompasses or does not preclude a drill, Johnson does not explicitly teach a drill, nor does Johnson teach a drill changer.

Seidel teaches an automatic tool changing device that includes a tool carrier 24 containing a plurality of tools 25 and mounted on a spindle carrier 21 (Figure 1) which is linearly moveable (see col. 4, lines 6-13) in the plunging or Z-direction to and from the workpiece (and the spindle can thus be considered a "drilling spindle"), wherein tool interchanger 29 exchanges tools between the spindle 22 on the spindle carrier 21 and the tool carrier 24 (Figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the spindle carrier provided with the automatic tool changing device mounted on a tool carrier as taught by Seidel for the generic "machine module"

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taught by Johnson for the purpose providing a metal working tool carrier that enables tools to be easily exchanged, thereby desirably increasing the capabilities of Johnson's device (for example by enabling plural diameters of holes to be drilled easily by providing a tool of a first diameter and a tool of a second diameter to be automatically exchanged).

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pat. No. 4,422,384 (Johnson et al.) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie) , and further in view of U.S. Pat. No. 3,722,711 (Seidel) as applied to claims 1 and 26 above, and further in view of U.S. Pat. No. 5,718,545 (Husted).

Johnson in view of any of Schlosstein, et al., Nagaoka et al., Onodera et al., or Howie and further in view of Seidel teaches all aspects of the claimed invention as described in the above rejection based thereon, but does not teach that the drill is "rotatable about at least one rotation axis for varying a drilling direction along which a hole is drilled in a workpiece".

Husted teaches a spindle block 40 (Figures 1-2) that can be used for drilling operations (col. 2, lines 21-28). The spindle block is pivotable about axle 44 (Figure 2) so as to rotate a tool 80 held thereby about the axle 44, thus presenting the tool to the workpiece at a different angular position (Figure 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the capability of pivoting the drilling tool taught by aforescribed combination of references about an axis in order to vary the presentation of the tool to the workpiece as taught by Husted for the purpose of increasing the capabilities of the

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device taught aforementioned combination (by enabling said device to drill holes at different angles).

Allowable Subject Matter

7. Claims 4-8, 19, 22, and 30-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 47, 55-57 are allowed.

9. Reasons for allowance for the allowed independent claims were set forth in the office action mailed 8/21/2003.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

10. Applicant's arguments filed April 16, 2004 have been fully considered but they are not persuasive.

11. With respect to the art rejections of claims 1-3, 10-11, 17-18, 20, and 36 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 3,722,497 (Hiestand et al.) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie), and also, claims **1-3, 10-11, 17, 20, and 36** under 35 USC 103(a) as being unpatentable over either of U.S. Pat. No.'s 4,422,384 (Johnson et al.) or 2,921,492 (Worth) in view of any of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.),

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5,635,833 (Onodera et al.), or 6,095,728 (Howie), applicant has asserted that “none of the references teaches a production system for processing a workpiece, including ‘an indexing system including a plurality of index devices removably mounted on the workpiece at known longitudinally spaced locations therealong, and a longitudinally extending index member releasably engaged with at least two of the index devices such that a position and orientation of the index member are fixed relative to the workpiece by the index devices,’ as set forth in claim 1”. It is noted that Applicant appears to particularly assert that the members that secure the various tracks (i.e., the “index devices” that secure the various “index members”) in the aforementioned references are not located at “known longitudinally spaced locations”. However, this is not persuasive.

Firstly, note that there is no claim language indicating in what way or manner or by what or whom the index device spacing is “known”. Note that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, it is not necessary under the present claim language that the spacing be “known” by any particular means or device, but just that it be “known”.

Secondly, note that the spacing is “known” in that a person using the device can look at it and see and thus “know” the amount of the spacing, at least in a broad sense. Additionally, further note that in order for the devices in question to process a workpiece in a desired fashion, the spacing would have to be taken into consideration in some manner, i.e., the spacing must not be greater than the size of the workpiece, or else the processing device and track could not be attached to the workpiece, and thus could not function properly. Thus, in at least this manner,

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the spacing is broadly “known” as claimed. Further note that Applicants’ assertions on pages 14-15 of the response of April 16, 2004 regarding the particular operations (sawing, welding, etc.) of the primary references (Johnson, Hiestand, or Worth) do not serve to distinguish over the prior art since firstly, the particular operation performed by the present “production system” is not claimed, nor is any particular type of tool, and secondly, again, the positions of the index devices are broadly “known” as claimed (emphasis added) as set forth in Examiner’s foregoing statements.

Regarding each of the secondary references in the aforementioned rejections, (Schlosstein et al., Nagaoka et al., Onodera et al., and Howie), Applicant has asserted that “the Examiner has not asserted that any of the secondary references discloses the claimed indexing system, including ‘a plurality of index devices removably mounted on the workpiece at known longitudinally spaced locations therealong,’ and Applicant finds no such teaching or suggestion in the references”. However, Examiner notes that none of these secondary references were relied upon to teach the feature of the “plurality of index devices removably mounted on the workpiece at known longitudinally spaced locations therealong”. See the above rejections based thereon. Thus, it is noted that in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding Applicants general assertions about the particulars of the disclosed invention set forth on page 14 of the response submitted April 16, 2004, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the

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claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is particularly noted that applicant has asserted that “[t]he actual locations of the index devices 30 can then be determined through the use of the indexing system, including the index member 60 and the reader 50”. However, Examiner notes that no claim language relating to how the position of the index devices is determined or “known”, nor any claim language relating to a “reader”, is found in claim 1.

Additionally, regarding Applicant’s assertions on page 16 of the response of April 16, 2004, Applicant is apparently referring to the rejection of claims 26 and 28-29 under 35 USC 103 as being unpatentable over U.S. Pat. No. 4,422,384 (Johnson et al.) in view of any of U.S. Pat. No.’s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie) as applied to claim 1 above, and further in view of U.S. Pat. No. 6,158,666 (Banks et al.), and apparently asserts that it would not have been obvious to have substituted a specific type of metal working device, i.e., the drill or fastener insertion device taught by Banks, for the generic “metal working tool” taught by Johnson because “Johnson et al. does not teach that the machine can move to any particular known positions along the workpiece”. However, this is not persuasive. Firstly, Examiner notes that no claim language relating to moving the machine to “particular known positions along the workpiece” is set forth in claim 1. Thus, it is again noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Secondly, it is noted that what is set forth in claim 1 is that the machine module is “operable to detect the position-indicating features on the index member and thereby determine a position of the machine module relative to the workpiece”. Note that the

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issue of the position-indicating features on the index member and the detector operable to detect them and determine a position as claimed were addressed via the provision of the secondary references of U.S. Pat. No.'s 5,477,596 (Schlosstein et al.), 5,016,359 (Nagaoka et al.), 5,635,833 (Onodera et al.), or 6,095,728 (Howie), and thus, Johnson was not relied upon to teach this feature. See the above rejections based thereon for details. Thus, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Insofar as Applicant has asserted that their arguments apply to the other dependent claims, Examiner's responses to those arguments also apply.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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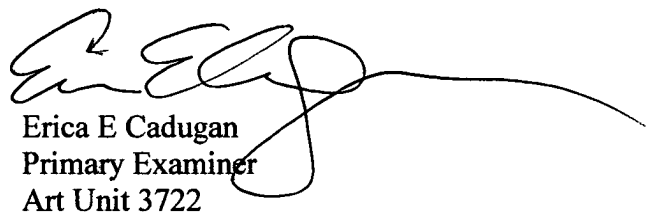
13. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Cadugan whose telephone number is (703) 308-6395. The examiner can normally be reached on Monday through Thursday from 7:30 a.m. to 5:00 p.m., and every other Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached at (703) 308-2159. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist whose telephone number is (703) 308-1148.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system,

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contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erica E Cadugan
Primary Examiner
Art Unit 3722

eec
July 7, 2004